

ENGINEERS IN THE ENVIRONMENT

A Speech by

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Following is the text of a speech given by the Minister for Environment Control at the official opening of the Auditorium of the Sydney Division of the Institution of Engineers, Australia, on 24th May, 1972

I AM DELIGHTED TO BE WITH YOU on this historic occasion. I am honoured by the invitation to officially open this impressive and functional auditorium. I commend all those who worked so long, hard and effectively to fulfil Sydney Division's quest for a modern centre to serve the needs of its 8,000 members.

This evening is in the nature of a house warming, and it is gratifying that so many, including leaders from important sections of the community, can share in the celebration of this happy event. It is good to know that Sydney Division is already making good use of its splendid new facility. This auditorium will help the division and the institution to fulfil an even more effective role on behalf of its members and in professional and community life.

As most of you know, the Institution of Engineers, Australia, was founded in 1919, incorporated in 1926 and granted incorporation by Royal Charter in 1938.

The objects and purpose of the institution are to promote and advance the science and practice of engineering in all its branches and to facilitate the exchange of related information and ideas. In other words, continuing education of engineers.

To carry out these objectives more effectively, divisions of the headquarters body were formed and the Sydney Division came into being in 1920. This division shared the same premises for many years. Accommodation was firstly rented in various buildings and later in Science House, Gloucester Street, Sydney.

In 1965, it became apparent to the Sydney Division that Science House accommodation was inadequate to cope with the increasing membership, activities and meeting attendances. Consideration was given to proposals for extensions and renovations to Science House and to obtaining alternative accommodation.

The institution eventually purchased the premises of the Australian Institute of Building in Milson's Point and the division took up occupation in 1967.

In 1968, an offer to buy the premises for a proposed development project was accepted in exchange for an extended leasehold of equivalent area in the new development, in which there was provision for a lecture theatre, supper rooms and office accommodation. The Accommodation Committee was attracted to the new professional area of Sydney.

Recently, the institution took possession of these fine rooms in Eagle House, Milson's Point - which stands on the land of the earlier building thus completing the division's quest for a modern, air-conditioned centre.

It probably does us all good to move out of the protective shell, which we may sometime inhabit, into a new environment, much as the institution has to-day. At the very least, there is usually a broader scene.

As a man with long and varied engineering and business career, as a Cabinet Minister who had a predominantly engineering portfolio for some years, and as a Member of Parliament of longstanding, perhaps I am able to see the engineering profession in broader perspective than most of my professional colleagues. I can say that my move, through my new ministerial responsibility, into the open unsheltered environment, literally and metaphorically, has given me a slightly changed view of our profession.

I remind anyone tempted to think I am now too remote from the profession that "to engineer" is "to contrive" and, by popular consent, politics is reputedly "underground engineering." Among engineers and those in other professions, there is agreement that the professional engineer has enjoyed a special image. Certainly not the image of the doctor who is regarded with special "reverence" because he is closely associated with the basic instinct for survival. There is nothing peculiar about this, of course. The "witch doctor" has always held exalted office in every tribal system.

Surprisingly, in this technological age, the architect enjoys a better image than the engineer. Yet, when I look at the spectacular Sydney city skyline, of masterpieces and a few monstrosities, I know engineers were responsible for the foundations, the structures, the services, the materials and the architect primarily for the artistic whole.

The engineer's image has produced few neurotic or schizophrenic worries about the "rightness" of things he did. It was the image of the doer - the practical man of action who took pride in doing it right, getting his facts straight and pushing ahead to a satisfactory solution. The monuments to his positive, constructive work are to be seen far and wide in useful, enduring works for the good of mankind.

Among the public we have served, and whose living standards we have largely underpinned, we were the men equally at home in making a road, designing a dam, manufacturing a car, building a power station. People were confident we could do all these constructive things because we exuded confidence based on successful engineering judgements without trying to. Our structures were safe and freestanding because, with the minimum of fuss, we designed them that way. There was no doubt (despite a factor of safety of say 5 or 10) in anybody's mind that that was the way it should be. In the public mind we had the image of professional integrity.

I am far less sure of the engineer's image with his wife. The better half of a civil engineer told me it is difficult to get him to dig the garden. There is an electrical engineer who is reluctant to fix the family toaster and a mechanical engineer whose spouse's car always fumes as if at full choke. Sometimes the ladies fume about us and give up calling on the professionals.

I am tremendously proud of the achievements of engineers and of our profession. However, I am sufficiently concerned about the future in a changing world to suggest self scrutiny, to realistically "Know Thyself".

It is important to take account of changing circumstances. The huge dinosaurs, for example, reigned for a million years or more but they are now fossils because they failed to adapt to change. In times when technology is so much to the fore, it seems odd that so few engineers have gravitated to such public areas of service as Parliament or organized groups with a social purpose in the community.

It has been said that we have been too busy for that because we are dedicated to an exacting and demanding profession. Many busy men of other professions, however, have made time for those outside activities and the influence they brought to bear.

It seems to me that, individually or collectively, we have never seriously seen the need to preserve our community position, or even to understand it properly, because we were in the happy position of needing no defence. Our image was good - our solid performance backed our image and, importantly, was seen to.

I have been using the past tense, purposely. We have enjoyed this good image. Do we still?

AT THE PRESENT TIME engineers are receiving some attention from the modern attitude generally described as "concerned" or "aware". Our motives are being questioned to some extent. However, the soundness of our various structures has escaped serious question--at least here in Sydney.

Arising from the new almost global era of concern for the future quality of life, society has already mobilized the engineering profession, without really knowing it, in practical programmes to

combat pollution and protect the environment from harm in many countries. To illustrate this, my new environment administration has two main parts.

There is the State Pollution Control Commission, the first in Australia, which has the task of setting standards and ensuring that practical actions are taken by all public authorities, including government departments, semi-government bodies, and local government councils.

The other, is the Department of Environment, also the first in Australia. It is a standard-type governmental organization designed to bring the "total environment" concept into the whole administration of government.

You will be interested to learn that the permanent head of my Department, the chairman and the director of my Commission, and most of the technical officers are engineers of professional standing.

I hasten to point out that there was no intention, when the new administration was staffed, to make it an engineer's club. It is simply that most of the immediate skills needed to get the clean-up job started were possessed by engineers because we entered into the multidisciplinary era before others.

It does not stop there. The New South Wales environment improvement programmes include accelerating the activities of all existing governmental agencies working in this field. Engineers have been engaged for many years in important environmental protection works. Some critics say engineers believe in development for development's sake. But today, engineers are playing an even more important environmental protection role in providing better water supplies and sewerage treatment plants, reducing harmful industrial effluents, eliminating noxious emissions from factories and motor vehicles, and in many other ways.

Engineers were the immediately effective front-line troops needed. The question to the profession is: "Who would know it?"

If engineers wish to change this taken-for-granted state of affairs they must relate their image to the future.

If this adjustment in thinking is not made, engineers will inevitably be judged on past performance. Unfortunately, the new environmentally "aware" or "concerned" society sees this performance as being connected with a polluted episode in our history. The profession's critics are not in the least aware or do not [P9] care that equally the benefits society enjoys today largely depend on the self-same performance of engineers in the past.

The engineer's future has to project a new and clear image, which is: "Our structures are environmentally sound".

The New South Wales Government has made a declaration of its environmental impact policy and published a statement of the principles on which it is based. My administration is now preparing practical guidelines for implementation of the policy through all public authorities in this State. Assistance is being given by a number of consulting engineers, in addition to engineers within the public service, in order to ensure that practical down-to-earth guidelines are drawn.

The Government insists that all decision-makers ensure that proper consideration is given to the likely impact of a project on the environment in the planning stage. I have noted some reluctance among all sections of the community to meet the cost of environmental impact procedures.

This is somewhat similar to the resistance found years ago to the introduction of safety in industry on the grounds of cost. Today every manufacturer recognizes the direct economic benefits of built-in safety and the obvious benefits to the whole society. The same thing must happen in the case of building environmental protection into development.

It is self-evident that the community will only get the kind of environment it is prepared to pay for in time, effort and money. In this important matter, engineers must not be passive. Individually and as a profession, we must use our influence to ensure that non-polluting structures are achieved, and are seen to be achieved.

More than almost any other profession, by the impact of their actions, engineers shall be known. Today, we live in an age where change is claimed to be the universal panacea. That is why so many people, particularly young people, and some old enough and educated enough to know better, take to themselves the right to demonstrate irresponsibly, recklessly and bitterly against the accepted way of doing things.

Too often, they want to tear down and destroy things which have brought progress, stability and security without having anything real and effective to replace it. Paradoxically, young people are showing an intense interest in, and at times a real awareness of, important environmental problems. Young engineers are not exceptions, they too are displaying a keener interest in the environment and the profession must view this as a welcome development.

I am not suggesting revolutionary changes in the profession, but logical evolution in attitude to meet changing times. I want to see a realistic and balanced approach to the future. Our forebears made great gains for us in freedom, wealth and living.

We all know that it is impossible to restore all of the past damage, or to preserve all of our present environment. However, through balanced development it is possible to enjoy the benefits of industrial progress while at the same time preserving our natural heritage.

Engineers are not going to solve environmental problems resulting from their work overnight. Well thought out balanced programmes are needed. Panic measures may attract a great deal of favourable publicity at the time, but may be of little sustained benefit.

Coercion by way of heavy fines may be a short-term answer to environmental problems, but this is not enough, as most overseas communities have found. Practical professional attitudes are much more effective weapons.

The use of advanced scientific and technical resources must be brought into the attack in such a way that we cure the disease, not limit ourselves to the symptoms.

WE IN AUSTRALIA ARE EXPERIENCING the elements of pollution and environmental problems in a manner no different from any developed country. However, we have an advantage over other countries because we are making a vigorous start on dealing with our problems before they reach crisis proportions.

We must face the facts as they are and not as we would like them to be. We should take account of the problems arising from the nature of the engineer. Engineers generally have cautious temperaments and exhibit diffidence to discuss their problems until they have studied all the facts.

When reporting they are inclined to provide an unvarnished version, including unpalatable facts, and sometimes publish these in a ponderous style which can often be misunderstood. Engineers appear to be programmed by nature, and training, to communicate efficiently with their brother professionals and people with associated skills. They do not seem to be programmed so well for general communication.

The salesman, solicitor and accountant all appear much better at getting their message across. Engineers must recognize this deficiency and make the extra effort necessary to achieve a standard of communication which will enable them to contribute their ideas effectively as whole people in the community at large.

The institution, and especially its senior engineers, have a duty to help rising engineers to fulfil a broader role in the community, and in particular, to cope with the difficulties that will come from the present emphasis on the environment. Schools of engineering can only start the process of making an engineer.

I know that much has been done in this way, but I am pointing out that more needs to be done.

I look upon the past efforts as the foundation on which we can build a greater future for the profession and for the community. To me, our traditions are those things from our past on which we can draw to guide us in the present and for the future.

It has taken much time and effort to build the institution to its present standing and we would do well to recognize that we have a firm foundation on which to build our future professional structure.

We have a sound position from which to project our future image. This fine auditorium is just one avenue for promotion of a better professional image in the future. Symposia, seminars, meetings, exhibitions and so on must be part of our professional sales organization.

We are, throughout Australia, 26,000 good men and true, the top of our profession in government, industrial and private enterprise. However, even united as one profession, without an updated sales organization, we are as yet no match publicly for one single vocal disjointed dedicated member from the newest environmental activist group.

The Institution of Engineers, Australia, has a proud record of achievement built by our dedicated leaders and solid members, in the 53 years since its foundation. I have confidence in the ability of the current leaders to achieve the adjustments necessary to meet the changing conditions.

Engineers, of course, are not the only section of the community under challenge. In fact, on environmental matters the whole world is under attack.

In meeting our challenge, let us keep in mind the lesson of the dinosaurs. They did not make it because they failed to adjust to change.

FOSSILS OR FUTURISTS? The choice is ours.

Again, I express confidence that this fine auditorium will enable the division to give better service to its members and help the profession to play a more effective role in the community.